

NOTES ON NEW ENGLAND DESMIDS,—II.

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THE Desmids reported here are from two different localities. One collection was made from a small pond on Misery Island, off Beverly Farms, Massachusetts, by the writer; the other from Kittery, Maine, by Dr. Roland Thaxter. Both contain species not hitherto definitely reported from New England and each includes species new to the state in which the collection was made. The specimens reported are in the herbarium of the writer, and they are indicated as H. C. no. 400, etc. The collection from Misery Island was from a small pond which at first glance would seem to be salt or at least brackish, but tides do not appear to reach the pond for it is fresh and contains fresh-water algae, among them many Desmids. It was thought at first that no filamentous forms were present, but a species of *Sphaerosoma* has turned up; curiously enough a species not before reported from New England. The assemblage of species is in many ways a curious one. Except where they have been reported from several localities in different states and are thus already known to have a wide range in New England, the previously reported localities are given. *Docidium* and *Penium* two of the common genera seem to be wanting. The following species were identified in the collection:

1. *Sphaerosoma spinulosum* Delp., var. Diam. 10 μ . A little wider than long, granules and not spines; otherwise like Delponte's species; more often two granules than three on each margin. In each semi-cell is a projection not shown in Wolle's figure of the species. Not common. *New to New England.* (Herbarium of J. A. Cushman, no. 376.)

2. *Closterium Jenneri* Ralfs. Diam. 15 μ , length across tips 70 μ . Rare. (H. C. no. 382.)

3. *Closterium lineatum* Ehrb. Diam. 50 μ , length across tips 80 μ . Not rare. (H. C. no. 337.)

4. *Closterium Lunula* Ehrb. Diam. 95 μ , length 540 μ . Seems to be rare. (H. C. no. 370.)

5. *Closterium subtile* Bréb. Diam. 6–7 μ , length 218 μ . The diameter is greater than that given by Wolle, but the plant otherwise fits the description and figures of the species. Reported before only from Orono, Maine. Rare. *New to Massachusetts.* (H. C. no. 382.)

6. *Cosmarium Bæckei* Wille. Diam. 28 μ , length 31 μ , isthmus 9.5 μ . The granules both in position and number are like the figure given by Wille. Frequent. Reported previously only from Orono, Maine. *New to Massachusetts*. (H. C. no. 379.)

7. *Cosmarium Botrytis* Menegh. Diam. 60 μ , length 71 μ , isth. 17 μ . Very abundant and varies considerably. (H. C. no. 400.) Zygosporos present — measuring with spines 80 μ , without 62 μ . (H. C. no. 382.)

8. *Cosmarium intermedium* Delp. Diam. 40 μ , length 56 μ , isth. 12.5 μ . Occasional. *New to New England*. (H. C. no. 379.)

9. *Cosmarium laeve* Rab., var. *septentrionale* Wille. Diam. 18 μ , length 28 μ , isth. 6 μ . Like Pl. xliii, f. 14, Wolle 1892. Slightly larger than the measurements given there. Common. (H. C. no. 394.)

10. *Cosmarium protractum* (Naeg.) Arch. Diam. 30 μ , length 34 μ , isth. 9 μ . This form corresponds to that of Pl. xx, f. 29, Wolle. 1892, given as *Cosmarium ornatum*, var. *minor*. Reported previously from Orono, Maine. *New to Massachusetts*. Common. (H. C. no. 394, 387, etc.)

11. *Cosmarium punctulatum* Bréb. Diam. 28 μ , length 31 μ , isth. 10 μ . Very common. (H. C. no. 400.)

12. *Cosmarium Quasillus* Lund. Diam. 58 μ , length 68 μ , isth. 14 μ . Ends somewhat concave. Reported previously from Orono, Maine. *New to Massachusetts*. (H. C. no. 376.)

13. *Euastrum verrucosum* (Ehrb.) Ralfs. Diam. 68 μ , length 80 μ , isth. 16 μ . The typical form. Occasional. (H. C. no. 382.)

14. *Micrasterias Americana* Ralfs. Diam. 100 μ , length 125 μ , isth. 28 μ , diam. bas. pol. lobe 28 μ . Like the figure of *M. Americana* Ralfs, forma *genuina* Ralfs given by Maskell except that the two spines on the polar lobes are sometimes lacking. Frequent. (H. C. no. 346.)

15. *Micrasterias Americana* Ralfs, var. This differs from any of the reported varieties and will be reported at a future time. (H. C. no. 343.)

16. *Staurastrum dejectum* Bréb, var. *mucronatum* Ralfs. Diam. 21 μ , length 18 μ , isth. 5 μ . Small form. Reported previously from Steep Brook, Massachusetts. Occasional. (H. C. no. 387.)

17. *Staurastrum echinatum* Bréb. Diam. 40 μ , length 42 μ . More aculei than noted by Wolle, about one third larger, otherwise similar. Occasional. (H. C. no. 387.)

18. *Staurastrum muticum* Bréb., var. *minus* Wolle. Diam. 21 μ , length 24 μ , isth. 6.5 μ . Occasional. (H. C. no. 376.)

19. *Staurastrum punctulatum* Bréb. Diam. 30 μ , length 30 μ , isth. 12 μ . Usually joined in a series of two or more, often four. Common. (H. C. no. 394.)

20. *Staurastrum subarcuatum* Wolle. Diam. 25 μ without the spines. Common. Previously reported from Steep Brook, Massachusetts. (H. C. no. 347.)

The collection made by Dr. Thaxter at Kittery, Maine, contained the following species :

1. *Hyalotheca dissiliens* (Smith) Bréb. Diam. 22 μ . Very common, much of it in a fruiting condition. (H. C. no. 386.)

2. *Hyalotheca dissiliens* (Smith) Bréb., var. *hians* Wolle. Diam. 31 μ , diam. of mucous sheath 70 μ . Not so common as the typical species but not infrequent. It has been reported but once from New England, then from Amherst, Massachusetts. *New to Maine*. (H. C. no. 386.)

3. *Hyalotheca mucosa* (Mert.) Ralfs. Diam. 19 μ . Not infrequent *New to Maine*. (H. C. no. 371.)

4. *Bambusina Brebissonii* Kg. Diam. including projections 22 μ , average length of cells 25 μ . Scarce. (H. C. no. 342.)

5. *Desmidium aptogonium* Bréb. This species was noticed in looking over fresh material.

6. *Desmidium Baileyi* Ralfs. Diam. 27 μ , length 22 μ , av. diam. of excavation 9 μ , av. length of same 19 μ . Frequent. (H. C. no. 344.)

7. *Desmidium cylindricum* Grev. Diam. 36-46 μ , sheath 63 μ . Common. (H. C. no. 390.)

8. *Desmidium Swartzii* Ag. Diam. 42 μ . Large form. (H. C. no. 371.) Another measured diam. 36 μ . (H. C. no. 390.) Common.

9. *Arthrodesmus Incus* (Ehrb.) Hass. This species was noticed in looking over fresh material. *New to Maine*.

10. *Penium Digitus* (Ehrb.) Bréb. Diam. 48 μ , length 164 μ . Somewhat smaller than the measurements given by Wolle. Frequent. (H. C. no. 386.)

11. *Penium margaritaceum* Bréb. Diam. 36 μ , length 220 μ . A more compact form than that given by Wolle as a comparison of the measurements will show. Not common. (H. C. no. 342.)

12. *Closterium acuminatum* Kg. Diam. 25 μ , length across ends 190 μ . Frequent. Reported from Bridgewater, Massachusetts. *New to Maine*. (H. C. no. 391.)

13. *Closterium Ensis* Delp. Diam. $42\ \mu$, length $550\ \mu$. The diam. of this specimen exceeds that given by Wolle. Not infrequent. *New to New England* (H. C. no. 344.)

14. *Closterium juncidum* Ralfs. This species was noted among the fresh material with excellent zygosporos.

15. *Closterium striolatum* Ehrb., var. *intermedium* Ralfs. Diam. $56\ \mu$, length $490\ \mu$. About 24 striae in all, distant. Frequent. *The variety is new to New England.* (H. C. no 371.)

16. *Closterium Venus* Kg. Diam. $10\ \mu$, length across ends $48\ \mu$. Frequent. (H. C. no. 384.)

17. *Docidium Trabecula* (Ehrb.) Naeg. Diam. at middle $28\ \mu$, at end $16\ \mu$, length $440\ \mu$. Common. (H. C. no. 480.)

18. *Calocylicus connatus* (Bréb.) Kirch. Diam. $63-65\ \mu$, length $83-87\ \mu$, isth. $45-50\ \mu$. The isthmus seems to be slightly narrower than in the figures given by Wolle. Common. (H. C. nos. 389 & 381.)

19. *Cosmarium Broomei* Thwaites. Diam. $32\ \mu$, length $34\ \mu$, isth. $12\ \mu$. Frequent. (H. C. no. 377.)

20. *Cosmarium capense* Nordst. The specimen compares well with the figure given by W. & G. S. West (Jour. Linn. Soc. Lond. Bot. xxxiii, p. 301, Pl. 17, f. 3.) Rare. *New to New England.* (H. C. no. 480.)

21. *Cosmarium laeve* Rab., var. *septentrionale* Wille. Diam. $21\ \mu$, length $27\ \mu$. Common. *New to Maine.* (H. C. no. 377.)

22. *Cosmarium nitidulum* DeNot. Diam. $42\ \mu$, length $50\ \mu$, isth. $15\ \mu$. Like the figure and description but considerably larger than the measurements given by Wolle. Rare. *New to Maine.* (H. C. no. 372.)

23. *Cosmarium Portianum* Archer. Diam. $25\ \mu$, length $36\ \mu$, isth. $9\ \mu$. Reported but once before from New England, then also from Maine. Rare. (H. C. no. 377.)

24. *Euastrum* sp.? Two species of this genus were found but are not yet identified.

25. *Staurostrum muticum* Bréb., var. *minus* Wolle. Frequent. (H. C. no. 347.)